

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
25 March 2004 (25.03.2004)

PCT

(10) International Publication Number  
**WO 2004/024037 A1**

(51) International Patent Classification<sup>7</sup>: **A61F 2/38**

(21) International Application Number:  
PCT/US2003/028424

(22) International Filing Date:  
10 September 2003 (10.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/409,623 10 September 2002 (10.09.2002) US  
60/412,209 12 September 2002 (12.09.2002) US  
60/416,338 4 October 2002 (04.10.2002) US  
60/416,379 4 October 2002 (04.10.2002) US

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

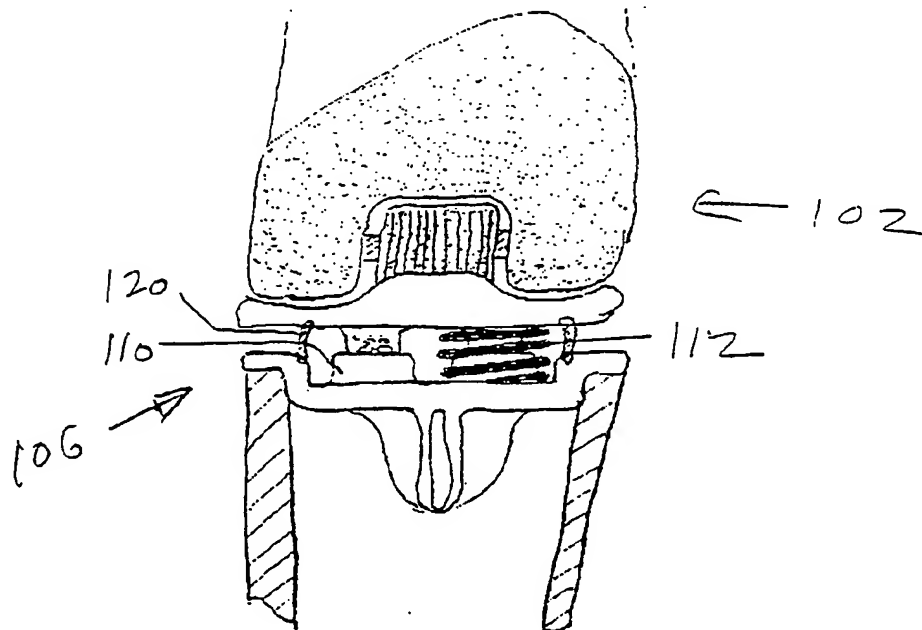
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: SHOCK-ABSORBING JOINT AND SPINE REPLACEMENTS



(57) Abstract: Numerous joint replacement implant embodiments including a total knee replacement implant including a femoral component (102) having a wheel (104); and a tibial component (106) including a shock-absorbing component with a piston assembly (110) and spring (112). Said implants contain a cushioning or shock-absorbing member to dampen axial loads and other forces. In many embodiments, fluid is forced rapidly from the device wherein compression and dampening is achieved by valves or other pathways that allow for a slower return of the fluid back into the implant as the pressure is relieved.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/28424

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61F 2/38

US CL : 623/20.21

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 623/20.21, 17.12, 22.30, 23.17

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,358,525 A (FOX et al) 25 October 1994 (25.10.1994), see entire document.	1,4-5,7-8,15-16,18,22-23
X	FR 2723841 A (FABIEN et al) 23 August 1994 (23.08.1994) see entire document.	1-6,9-13,17-18,22-23
X	US 3,648,294 A (SHAHRESTANI) 14 March 1972 (14.03.1972), see entire document, note membrane 34.	1-5, 8-13, 15-18, 22-23
X	US 4,932,969 A (FREY et al) 12 June 1990 (12.06.1990), see entire document.	1m 3-6, 9-13, 17-18, 22-23
X,P	US 2002/0151978 A1 (ZACOUTO et al) 17 October 2002 (17.10.2002), see all embodiments.	1-6, 8-11, 13, 15-18, 22-23

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☐ See patent family annex.

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document member of the same patent family

Date of the actual completion of the international search

05 January 2004 (05.01.2004)

Date of mailing of the international search report

14 JAN 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

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